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MOAB DISTRICT

1990 SUMMARY OF PROGRAMS

U.S. Department of the Interior

Bureau of Land Management

Moab District, Utah

March 1991

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United States Department of the Interior

BUREAU OF LAND MANAGEMENT

Moab District
P.O. Box 970
Moab, Utah 84532

Dear Public Land User:

In southeastern Utah's Carbon, Emery, Grand, and San Juan Counties, the Bureau of Land Management's Moab District administers about 6.2 million acres of public lands--lands that provide a variety of opportunities and uses. The Bureau's basic mission is keeping these uses in balance to ensure sustained yield of renewable resources to meet the needs of future generations. This report describes the various opportunities available in the district and summarizes our management activities in fiscal year 1990 (between October 1, 1989 and September 30, 1990).

Volunteerism and partnerships continue to be a very important component in accomplishing many of the activities described on the following pages. Such efforts enable visitor services and resource improvements that would otherwise be impossible in this time of unprecedented use and federal funding cutbacks. We have some 85 existing partnerships, which demonstrate the variety of interests in and demands on the public lands. In fiscal year 1990, the volunteer hours worked in Moab District were valued at nearly $250,000.

The national resource lands of southeastern Utah are among the most valued in the Nation, not only for their many and varied natural resources, but also for their scenery and recreation opportunities. User demand for these valuable resources has increased dramatically; for example, during 1990, 47,000 visits (trips) were made on the Slickrock Bike Trail. We are proud of these lands and the multiple uses they provide for the American people and visitors from other nations.

We appreciate your interest in the administration of these important multiple-use resources.

Thank you,

Gene Nodine
District Manager

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BUREAU MISSION AND GOALS

The Bureau of Land Management is responsible for the stewardship of our public lands. It is committed to manage, protect, and improve these lands in a manner to serve the needs of the American people for all times. Management is based on the principles of multiple use and sustained yield of our Nation's resources within a framework of environmental responsibility and scientific technology. These resources include recreation; rangelands; timber; minerals; watershed; fish and wildlife; wilderness; air; and scenic, scientific, and cultural values.

Moab District Manager
Gene Nodine

TEN-YEAR GOALS (1990-2000)

Multiple Use and Sustained Yield - The BLM as an agency will manage for a sustainable variety of multiple uses of the public lands to obtain an ecologically sound environment and contribute to a strong economy.

Partnerships - The BLM will develop partnerships with public, private, and industry groups; native Americans; and individual volunteers to share responsibility and will provide expertise and experiences for sound management of natural resources.

Resource Conditions - The BLM will improve resource conditions and prevent environmental degradation so that the public lands serve as a model for environmentally sound land use management.

Human Resources - The BLM will employ a diverse workforce and increase the commitment to their professional development to achieve quality service and management.

Science and Technical Development - The BLM will strengthen research, science, and technical development efforts to accommodate the growing emphasis on global environmental issues and to incorporate proven technological developments into its program practices.

Service - The BLM will foster a service ethic that is responsive to the public and meets the needs for public participation and information sharing.

INTRODUCTION

LAND OWNERSHIP AND ADMINISTRATION

The State of Utah covers about 52.5 million acres of land, of which BLM manages just over 22 million acres. Including the areas set aside as Indian reservations and national parks, forests, and recreation areas, the Federal Government administers over 70 percent of Utah, or almost 38 million acres.

BLM has five districts in Utah: Salt Lake, Cedar City, Richfield, Moab, and Vernal. Moab District, the second largest, covers a four-county area of about 11.3 million acres, of which BLM administers approximately 6.2 million acres as shown on Map 1.

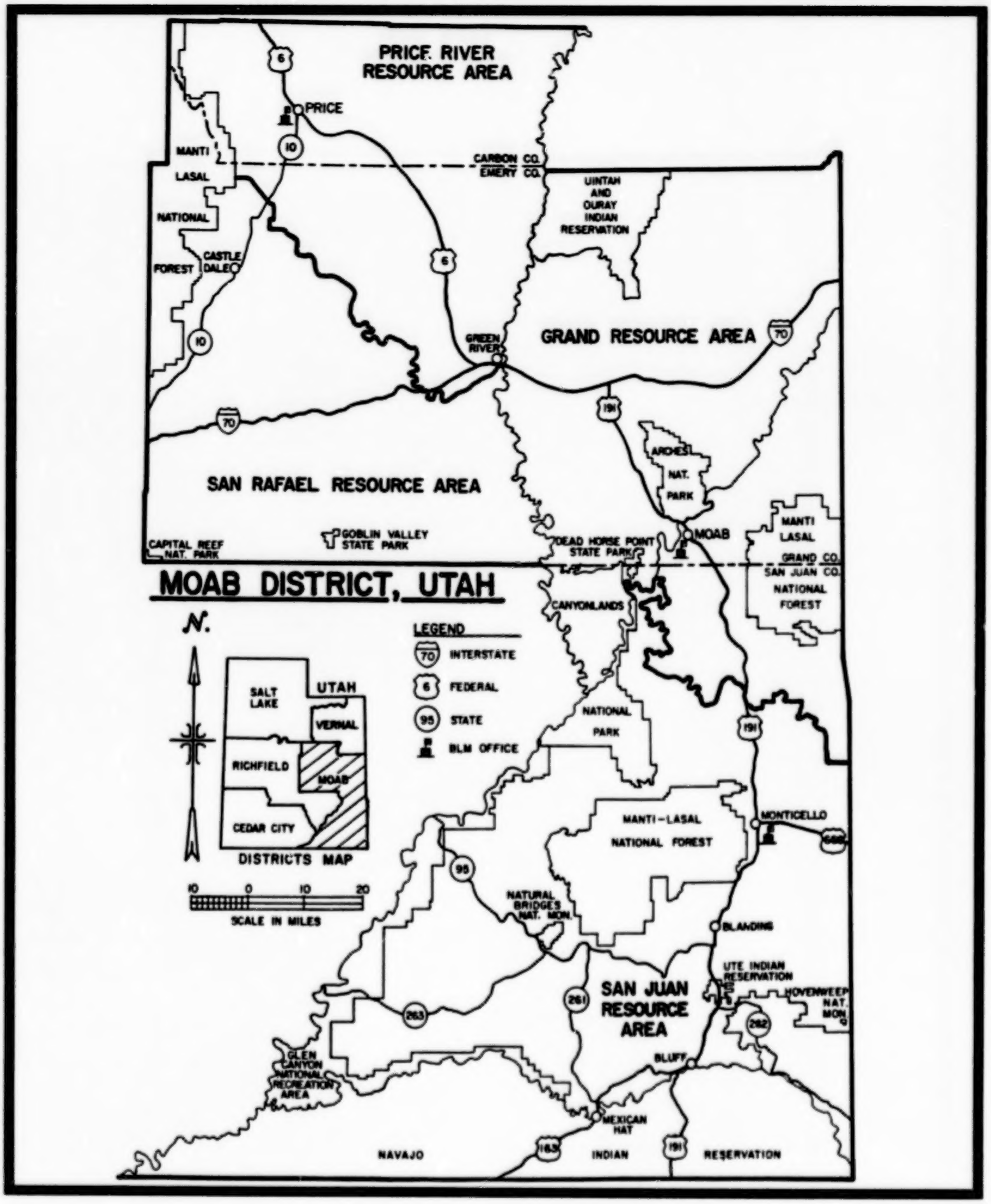
County populations within the district in 1990 were:

Carbon	20,228
Emery	10,332
Grand	6,620
San Juan	12,621
TOTAL	49,801

Most of the public land within the district is in rough upland terrain, generally in large blocks, with fewer than 45,000 acres in isolated or scattered tracts. Land ownership and administration in the Moab District is apportioned as shown in the next column.

Surface Management	Acreage
BLM	6,185,123
U.S. Forest Service	748,906
National Park Service	351,664
Department of Defense	1,619
Other Withdrawals	361,781
Indian Reservations	1,454,726
SUBTOTAL	9,103,819
State/County/Private	2,166,066
SUBTOTAL	2,166,066
GRAND TOTAL	11,269,885

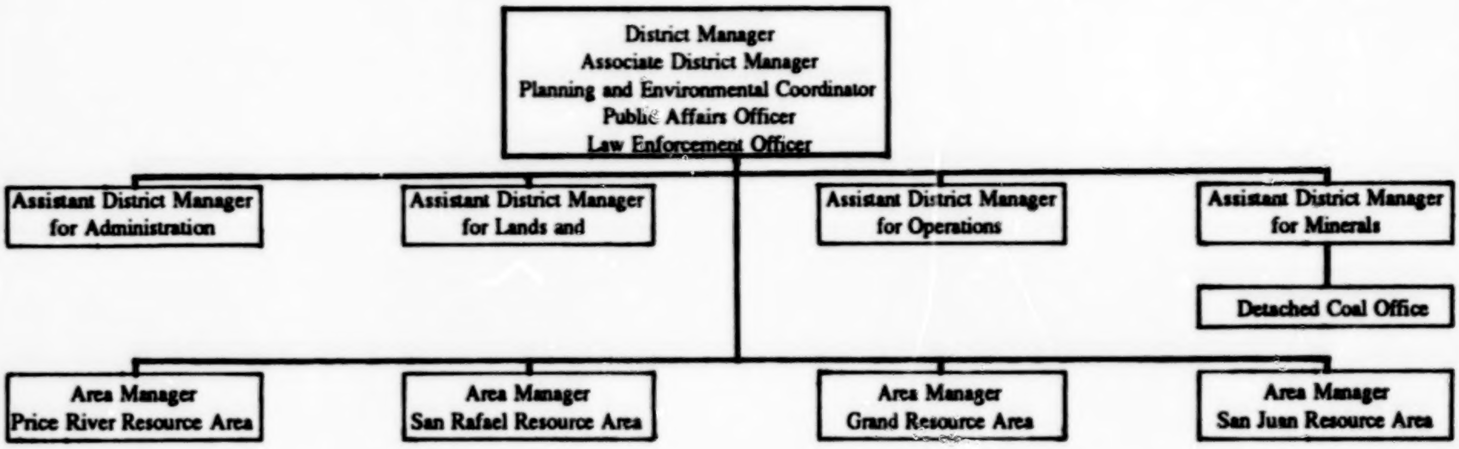
Moab District surrounds or abuts several areas that contribute significantly to public land use within the district: Arches, Canyonlands, and Capitol Reef National Parks, Hovenweep and Natural Bridges National Monuments, Glen Canyon National Recreation Area, Fishlake National Forest, three sections of the Manti-LaSal National Forest, and nine state parks (Dead Horse Point, Edge of the Cedars, Goblin Valley, Goosenecks, Green River, Huntington Lake, Millsite, Newspaper Rock, and Scofield Lake). Public lands in the district also abut the Navajo, Ute Mountain, and Uintah and Ouray Indian Reservations.



MAP 1

Moab District

MOAB DISTRICT TABLE OF ORGANIZATION


District Manager
Associate District Manager
Planning and Environmental Coordinator
Public Affairs Officer
Law Enforcement Officer
Assistant District Manager for Administration
Assistant District Manager for Lands and
Assistant District Manager for Operations
Assistant District Manager for Minerals
Detached Coal Office
Area Manager Price River Resource Area
Area Manager San Rafael Resource Area
Area Manager Grand Resource Area
Area Manager San Juan Resource Area

Moab District is divided into four resource areas: Price River (all of Carbon County and the northeastern one-third of Emery County); San Rafael (the southern two-thirds of Emery County); Grand (all of Grand County and the northern one-third of San Juan County); and San Juan (the southern two-thirds of San Juan County, except for the Navajo Indian Reservation). The table of organization shows major administrative divisions for managing public lands and resources.

PAYMENTS IN LIEU OF TAXES

To mitigate the tax-base impact of such large federally owned land areas in the Western states, Congress passed the Payments in Lieu of Taxes (PILT) Act to help finance local government operations that would be supported by taxes if the lands were privately owned. These PILT payments, which may be used for any governmental purpose, supplement other federal land receipt-sharing payments local governments may be receiving.

Of the $9.1 million in PILT funds paid to Utah counties in fiscal year (FY) 1990, Moab District's four counties shared about $1.4 million as shown in the next column:

Carbon	$338,498
Emery	$366,892
Grand	$306,079
San Juan	$380,952

MANAGEMENT PROGRAMS

The district's management programs are summarized on the following pages. Major land and resource programs include cultural resources; recreation; lands, realty, and rights-of-way; rangelands; wildlife; soil, water, and air; forest products; and minerals. Also discussed are major support programs: planning, law enforcement; hazardous materials; public affairs, and fire management.

CULTURAL AND PALEONTOLOGICAL RESOURCES

Cultural resources are the remains of past human live, in the form of artifacts and places where significant events occurred. BLM's direction for managing cultural resources is based on the Federal Land Policy and Management Act of 1976 (FLPMA), the Historic Preservation Act of 1966, and several other federal laws and executive orders. Our policy is to ensure full consideration of cultural resources in all land management decisions; to maintain or enhance scientific and socio-cultural values; to avoid inadvertent damage to cultural resources; and to protect and preserve representative samples for scientific use and socio-cultural benefits to present and future generations.

Among Moab District's over 22,000 recorded archaeological sites are some of the most significant and best-preserved cliff dwellings under BLM management. The recorded sites are believed to represent a mere 5 percent of the district's total. The cultural resource program principally involves inventory and research, interpretation and development for public use, and site protection through ruin stabilization and surveillance patrol.

Moab District moved toward proactive management of cultural resources this year by proposing a special designation for Grand Gulch/Cedar Mesa that would encompass all of Cedar Mesa from Butler Wash to the Red House Cliffs, including a number of high-use recreation areas and some of the best-preserved Anasazi sites on public land. The proposal includes a new visitor center on Highway U-95, an expanded contact station and camping facilities at the Kane Gulch trailhead, and more personnel to handle increasing visitor use, which rose to 9,000 persons this year, 69 percent above that for 1989.

District personnel took part in public education and preservation awareness activities by sponsoring and advising three local chapters of the Utah Statewide Archaeological Society (USAS), teaching two amateur accreditation classes, and serving as chairpersons of two county historical commissions. Under a cooperative agreement with BLM, volunteers from the Price USAS chapter continued an inventory of the rock art in Nine Mile Canyon.

We helped to celebrate the third Utah Archaeology Week by giving lectures and museum tours in Price and Moab. These public efforts bore fruit in major new finds being reported to staff archaeologists by the interested public, including a 2,000-year-old burden basket that stands 3 feet high. A regional journal also devoted an issue to articles about BLM archaeology sites or projects.

Moab District continued to play a major role in the Four Corners BLM cultural initiative, which has produced an ambitious proposal to overhaul and intensify cultural management and anti-vandalism efforts throughout the Four Corners region. Our most important effort of 1990 was the Four Corners Governors Conference on cultural resources, which took place at Dolores, Colorado June

Travis Hoag, David York, and Steve Walden with the burden basket they found while hiking.

19-21. Located at the BLM's Anasazi Heritage Center museum, it included 3 days of public events and a working conference on resolving development, preservation, and management problems on all lands in the Four Corners area. Results of the conference have been published, and a joint committee of federal, state, and private interests continues to work to achieve conference goals. Also as part of the conference, the Heritage Center mounted an exhibit on the recently discovered prehistoric road network in Southeast Utah.

We cooperated with the U.S. Forest Service and the Sierra Club on a vandalism monitoring and inventory project in the Whiskers Draw and adjacent areas of San Juan County. This partnership will continue for a third year in 1991.

We co-sponsored the Wetherill Group "Anasazi Basketmaker Symposium" in Blanding in May, attended by over 400 amateur and professional archaeologists. This provided important new information on early archaeology research in Grand Gulch and other areas of San Juan County, Utah. In August we also helped host the 61st annual Pecos Conference on Southwest Archaeology in Blanding.

PALEONTOLOGY

The paleontology program manages plant and animal fossils and is handled by archaeologists with technical input from geologists, many trained in paleontology.

Dinosaurs are familiar fossils, but fossilized fish, insects, plants, and eggs have been found within the district. Opportunities for research and interpretation are significant, with more than 10 type sites (where fossils were first identified), three active fossil quarries, and dinosaur footprint trackways.

The district has three developed fossil sites: the world-renowned Cleveland-Lloyd Dinosaur Quarry, the Mill Canyon Fossil Trail, and the new Copper Ridge Therapod Trackway. The quarry yielded the first dinosaur egg dating to the 135-million-year-old Morrison Formation, and has contributed over 30 mounted specimens worldwide. Last year we hosted a Brigham Young University field school in paleontology and prepared many bones for in-place exhibit.

The other two sites are both trails. Fossilized bones embedded in rock can be seen along the Mill Canyon Fossil Trail, a popular mountain biking destination. A guide brochure describes numbered interpretive stations. The Copper Ridge Therapod Trackway has a series of huge dinosaur footprints featuring a unique "right-hand turn."

RECREATION

FLPMA recognizes recreation as a principal public land use. The Bureau's recreation management program assists in the management of the public lands through resource protection actions and by providing visitor services in the form of facilities and information. In the Moab District, the recreation program supervises 5 campgrounds; 370 miles of hiking, mountain biking, jeeping and interpretive trails; 3 ranger stations; 12 boat launch areas along 10 river segments with recreational boating; 6 picnic areas; 3 interpretive exhibits, and 2 primitive areas.

In FY 1990, the recreation program processed over 7,000 applications for private river permits and issued 2,263 permits to groups and administered 142 permits for commercial outfitters and special events. Fee collections for private and commercial uses rose to $173,181. The program benefitted from the assistance of volunteers who contributed 12,700 hours of service.

San Juan River guides and volunteers proudly display tires and other trash removed from the river corridor.

In a project jointly sponsored by Pizza Hut and the Utah Department of Transportation, Grand County Middle School students removed trash from the Colorado River corridor along Utah Highway 128.

Four new informational brochures were produced during the year in partnership with the Grand County Travel Council and the Canyonlands Natural History Association (CNHA), including *Southeast Utah River Recreation, Sand Wash Nature Trail, Westwater Canyon Guide*, and the *Westwater Geology* guide. In the spring of 1990, BLM co-hosted (along with the National Park Service and CNHA) an interpretive skills training session for river guides and outfitters in Desolation Canyon. The program also helped prepare a new river recreation opportunities exhibit at the John Wesley Powell River History Museum. The district continued its partnership with the Canyonlands Field Institute through sponsorship of three whitewater river rescue and safety seminars in Westwater Canyon.

The district continues its efforts to renovate and upgrade facilities at developed recreation sites with work being completed at Sand Island Campground, the Westwater Ranger Station, Price Canyon Campground, San Rafael Campground, Needles Overlook, and Cedar Mountain Recreation Site. Access for handicapped persons was provided to the restrooms at the Cleveland-Lloyd Dinosaur Quarry. Completion of the takeout beach concrete boat ramp and graveling the access road represented a major improvement along the Colorado River. Preliminary site plans were completed for the Dewey Bridge Launch Area, the Cisco takeout, Westwater Ranger Station, Monitor and Merrimac View Area, Sand Island Campground, and the proposed Comb Wash and San Rafael campgrounds. Parking areas and access roads were completed by the Utah Department of Transportation (UDOT) along Utah Highway 313, paving the way for BLM to develop an interpretive brochure and exhibits in 1991.

District Manager Gene Nodine (right) coordinating recreation opportunities across agency boundaries with Harvey Wickware (left), Park Service, and George Morris (center), Forest Service.

LANDS, REALTY, AND RIGHTS-OF-WAY

The goals of the lands, realty, and rights-of-way program are to (a) provide efficient, timely, and professional lands and realty service to meet public needs and demands; (b) maintain consistency with multiple-use management objectives and initiatives; (c) process lands and realty actions and provide services in support of other federal programs; (d) assist the public by providing public land status and use information; and (e) maintain the public land records and monitor use on public lands.

Fundamentally, the program serves public land users and provides for the wise use and orderly, environmentally responsible development of public lands and resources. The lands and realty program is also involved with processing withdrawal actions and reviewing existing withdrawals and other land use restrictions to determine whether they are still necessary. A strong emphasis is also placed on trespass abatement.

As required under FLPMA, we make sure that the Federal Government receives fair market value for the use of public lands and resources, and that the actions we permit are economically, socially, and environmentally sound.

While we make every effort to fulfill public and other agency requests for rights-of-way, land exchanges, use permits, and leases, desert land entries, and other actions, the rugged terrain of southeastern Utah often determines what can be done, and where. For example, to reach Moab and points south, all utilities, pipelines, railroads, and highways must pass through Moab Canyon, less than one-quarter mile wide.

Meeting requests for land actions can be further complicated by the existence of mining claims, which give the claimant prior property rights, making it extremely difficult to transfer public lands out of federal ownership. Mining claims can also limit access to public land, block acquisition of gravel, limit general public use, and complicate right-of-way administration.

As successor to the General Land Office, BLM maintains the Nation's public land and mineral records. These records now total well over a billion documents and are scattered among 200 offices. The older records are becoming illegible, and even the newer ones are deteriorating because manual maintenance requires excessive handling. Comprehensive sets of records are available at only a few offices.

Through its automated land and mineral record system, BLM is integrating these records into a workable system, which will ensure accuracy and consistency of data, streamline responses to inquiries, speed the processing of applications and permits, improve records accessibility and physical security, and protect proprietary and confidential information. Record-keeping costs are expected to drop as program planning, tracking, and evaluation improve. Being able to access land and mineral records through telecommunication will save time and reduce travel and manual maintenance costs.

Recently the lands and realty functions were consolidated into one program, allowing more flexibility in the field offices and increasing the ease of state and national office operations. More emphasis has also been given to acquiring lands and access easements through the Land and Water Conservation Fund. FY 1990 also brought sustained allocations to administer public lands through proper authorization and resolution of realty and right-of-way trespass cases, and the realization that funding depends on the meeting of significant public land management issues, such as (a) land exchanges, (b) land and access acquisition, (c) public service and associated realty support of recreation and public purposes leases, rights-of-way, use permits, sales, and desert land entries.

As shown in table 1, FY 1990 was a record-breaker for Moab District in terms of completed lands and realty actions.

TABLE 1

Summary of 1990 Lands and Realty Program Accomplishments

Type of Case	Units Planned		Units Completed	
Airport patent	370	acres	370	acres
Land trespass	50	cases	51	cases
Land use permit	25	cases	73	cases
Plan amendment	3	amendments	3	amendments
Public land sale	317	acres	550	acres
Recreation and public purpose lease	4	cases	2	cases
Right-of-way	100	cases	184	cases
Right-of-way compliance	106	cases	143	cases
Right-of-way trespass	20	cases	23	cases
Desert Land Entry	1	case	1	case
Other Realty Actions	1	case	2	cases
Easements Acquired	0	cases	1	case

RANGELANDS

BLM manages and protects rangeland resources and administers domestic livestock grazing on public lands under the Taylor Grazing Act of 1934, as amended; FLPMA defined management under the principles of multiple use and sustained yield. Our policy is to manage, maintain, and improve the condition of public range to keep it producing all rangeland values.

We manage rangeland resources on 6.2 million acres in the Moab District. Through various monitoring studies, we can observe the basic health of the range and determine whether specific objectives are being met. These monitoring studies, a followup requirement in each resource management plan (RMP) and grazing environmental impact statement (EIS), provide much of the current workload and enable us to determine when management should be changed to protect, maintain, or enhance the range resource. We work closely with livestock permittees and the Utah Division of Wildlife Resources (UDWR) to adjust numbers of livestock and wildlife to resolve conflicts and prevent the vegetation resource from being overutilized.

During FY 1990 we read monitoring studies on 119 allotments; evaluated 8 allotments with at least 3 years of monitoring data to make sure management objectives were being met, and made adjustments where necessary.

LIVESTOCK GRAZING

During FY 1990 the district was hit with a third--and in some areas, a fourth--year of extreme drought conditions. This resulted in reductions in livestock numbers averaging 50 percent over the entire district, and 100 percent reductions in some parts of the Price River and San Rafael Resource Areas. The livestock permittees were very cooperative in this effort to protect the range; many took voluntary reductions, and some sold their entire herds. The range staff spent most of its time working with the permittees and other affected interests to ensure that the vegetation resource was protected during the drought. The district issued only 543 grazing permits during FY 1990, for approximately 125,000 animal unit months (AUMs) of grazing, compared to the 250,000 to 270,000 AUMs permitted in normal years.

Retiring Grazing Advisory Board members Boyd Marsing (left) and D.L. Taylor (right) with District Manager Nodine. Retiring member Don Barton was not present for the photograph.

RIPARIAN HABITAT MANAGEMENT

Managing riparian habitat, one of BLM's top priorities, requires interdisciplinary coordination, especially among the soil, water, range, and wildlife programs.

As funding allowed, we moved ahead last year with implementing the 1989 riparian habitat management strategy. We also prioritized riparian areas for work, established monitoring studies on riparian areas, and read studies on riparian demonstration areas.

RANGE IMPROVEMENTS

Volunteers and interagency partnerships play a large role in completing range improvement projects such as catchments and water systems that make otherwise uninhabitable areas usable; seedings to improve the quality and quantity of forage; chainings; prescribed fires to maintain previously implemented seedings; and fences, cattleguards, etc. to keep livestock in or out of certain areas.

Needed range improvements are usually identified through the BLM planning process. In FY 1990 the district completed or participated in a total of 12 range improvement projects at a cost of over $54,400. Ranchers contributed more than $14,000 in time and money for three of the projects.

WILD HORSES AND BURROS

BLM's policy for managing wild horses and burros is based on the Wild Free-Roaming Horse and Burro Act of 1971 and on FLPMA. Wild horses and burros are considered an integral part of the public lands. In areas where they existed in 1971, we must protect them and manage their habitat to achieve and maintain a thriving ecological balance. If overpopulation exists, excess animals must be removed to protect rangelands from deteriorating. Animals removed are offered for private care through our Adopt-A-Horse and Adopt-A-Burro programs. Only qualified individuals are allowed to adopt animals. After providing appropriate care for one year, the individual may obtain title to the animal.

During FY 1990 we monitored 154 wild horses and 45 wild burros on four herd areas covering 431,000 acres. Due to drought conditions and lack of forage, 17 head of wild horses were captured and made available for adoption.

Rangeland monitoring: BLM staff, local ranchers, and university specialists comparing present observable vegetation condition with past range studies.

WILDLIFE HABITAT

BLM's wildlife habitat management program, which includes fisheries and endangered plants and animals, is based on legislation. FLPMA directs BLM to provide food and habitat for fish and wildlife. The Endangered Species Act requires BLM to conserve endangered species, help in their recovery, and avoid jeopardizing the continued existence of a listed species or destroying its critical habitat. The Sikes Act directs cooperation with state agencies on wildlife conservation. The state manages the animals, while BLM manages habitat; therefore, a state-federal partnership is essential.

THREATENED OR ENDANGERED SPECIES

The district's geologic diversity brings a corresponding botanical diversity, which is reflected in the number of threatened, endangered, and rare plant species found here. Endangered species include the spineless hedgehog cactus, Maguire daisy, Wright's fishhook cactus, and San Rafael cactus. Two threatened species, Jones cycladenia and last chance townsendia, are also found in the district, and another 29 plants are candidates for federal listing.

Endangered animals found in Moab District include bonytail chub, humpback chub, Colorado squawfish, peregrine falcon, and bald eagle. The falcon and eagle both nest here. Black-footed ferrets were found here historically, and recent sightings have been reported, but these reports remain unverified. A number of candidate and state-listed sensitive animal species also occur in the district.

The district has inventoried endangered plants on nearly 800,000 acres; ongoing surveys for peregrine falcon eyries document additional nests each year. We cooperate with UDWR to monitor known peregrine and bald eagle nests and assist with studies of ferruginous hawks and river otters. The Moab District is also involved in black-footed ferret recovery efforts.

BIG GAME HABITAT

Big game habitat management is an extremely important part of the district wildlife program. We cooperate with UDWR and private groups on big game habitat improvement projects and to monitor populations and habitat conditions for interagency hunt recommendations. Big game species include desert and Rocky Mountain bighorn sheep, pronghorn antelope, deer, elk, and moose.

A herd of Rocky Mountain bighorn sheep is found in the Book Cliffs of Grand and Price River Resource Areas. Desert bighorn sheep are given special emphasis bureauwide. Bighorn sheep management efforts include habitat improvements, cooperative efforts with UDWR to re-establish populations in historic habitat, and actions to resolve conflicts. We work to improve habitat through various projects such as the three rainwater catchments installed last year. Because most materials must be flown in by helicopter, these projects are expensive. District installations were made possible by Canyonlands Wildlife Federation and the Foundation for North American Wild Sheep.

BLM and UDWR staff with one of 20 bighorn sheep moved to Westwater Canyon last November.

Fewer pronghorn antelope are found in Utah than in other western states, and the species is in high demand for both consumptive and nonconsumptive uses. Moab District is home to four pronghorn antelope herds.

The district has more than 1.8 million acres of deer winter range, of which 400,000 acres are classified as crucial.

All four resource areas manage winter range for the five elk herds in the district, and there is also some summer range. Moose habitat is limited to a small area in the northwest portion of the district.

Other program components are game birds, nongame animals, and fisheries. Habitat work has been done in the past for chukar, among the most popular of game birds. Sage grouse habitat is managed through water developments, burns, and protection of strutting grounds. Last year UDWR released Rio Grande turkey in several areas.

NONGAME HABITAT

Nongame habitat is best managed through conservation of ecosystems that provide for a diversity of plant and animal species. Two of the district's most significant ecosystems are riparian areas (discussed under Rangelands) and prairie dog towns. Prairie dog towns are important because of the complex relationships between prairie dogs and predators and because they support several endangered or candidate species.

FISHERIES

A great deal of work has recently been done in the district riparian demonstration area (see Rangelands and Soil, Water, and Air) to benefit cutthroat trout. Another project is being planned to inventory and re-establish cutthroat trout in the Book Cliffs.

PROGRAM PLANNING

Other priority work included support for other programs and development of activity plans. One of the district's ten habitat management plans (HMPs) was revised in 1990: the Potash-Confluence HMP, which has major goals for bighorn sheep, bald eagle, and peregrine falcon. New HMPs for the North San Rafael Swell and Range Valley-Mountain (Book Cliffs west of Green River) are nearing completion. The latter is being developed with extensive public involvement from conservation groups, permittees, local politicians, and other agencies.

The district has also completed its Fish and Wildlife 2000 plan, setting program direction for the next 10 years.

SOIL, WATER, AND AIR

Soil, water, and air are basic necessities on which other resources depend. Program policy is based on the Clean Water Act, the Clean Air Act, FLPMA, and other laws and executive orders reflecting national objectives as well as state and local needs. For example, we attempt to avoid or curtail development on critical or fragile soils and to protect and enhance the quality, quantity, and uses of waters on the public lands. We identify and quantify claims to water on public lands, record reserved water rights with the state, and obtain nonreserved rights following the state's administrative procedures. We allow only activities that comply with state air quality standards.

Chief management concerns involve interactions of soil and water. More than 1,600 miles of live stream flow through the Moab District in the Colorado, Dolores, Green, and San Juan Rivers and their tributaries. Many springs, wells, and intermittent streams also require management attention.

In FY 1990, we completed a variety of watershed monitoring projects to support range, recreation, riparian, and wildlife programs. In both the Indian Creek riparian demonstration area and the Mud Springs riparian area, we monitored water quality, stream cross-sections, and the depth of the water table in order to learn how stream revetments, fencing, and other treatments have affected water temperature, sediment concentration, channel erosion, and vegetation cover.

With the State of Utah, we sampled water quality in more than 35 streams, springs, and public water supplies to comply with federal and state regulations and to develop a data base from which management decisions can be made. For example, water quality monitoring in tributaries to the Green River in Desolation Canyon and in tributaries to Comb Wash drainage will help to determine the effects of recreation and grazing in those areas.

We cooperate with the Utah State Climatologist and Boise Interagency Fire Center to monitor air quality at 10 sites throughout the district. Information from these weather stations is a valuable addition to the world climate-change data base and contributes to accurate fire hazard ratings.

Precipitation measurements, monitored at 49 locations around the district, have been extremely valuable in FY 1990 because of Utah's drought conditions. Our range staff use the local information to help determine appropriate stocking rates for Moab District grazing allotments.

The district salinity program was very busy in FY 1990. In cooperation with the Bureau of Reclamation, we initiated a salinity research program in the Sagers Wash watershed. The study is designed to determine the effectiveness of earthen structures in reducing salinity yield from Mancos Shale-derived soils.

In FY 1990 we built two water-spreading structures and one drop structure and installed one surface water/sediment gaging station. We hope to complete the Sagers Wash Comprehensive Watershed Management Plan in 1991.

FOREST PRODUCTS

BLM policy for managing forest resources is based on FLPMA, which recognizes the Nation's need for domestic timber, and on the Material Sales Act, which authorizes disposal of timber and other vegetation resources from public lands.

Utah has about 4 million acres of BLM-administered woodlands, of which about 1.5 million acres are in the Moab District. Managing these resources includes issuing permits for fuelwood, posts, and Christmas trees; on-the-ground monitoring to ensure compliance with permit stipulations; and reporting permit sales through the automated data processing system.

Many local residents depend on fuelwood from Moab District public lands. The Utah Gas Service Company estimates that 90 percent of the all-electric homes in the Moab vicinity use wood as a primary source of fuel for heating. They also estimate that 35 percent of homes equipped to burn gas also use wood for heating fuel and that this percentage is on the increase. The Moab District has supplied a large Ute and Navajo Indian population with fuelwood for years. Many of these people use wood as a sole source of fuel for heating and cooking.

As fuelwood is depleted in the more populated areas of Utah, commercial operators transport more pinyon and juniper from the Moab District to the Wasatch Front. Local operators have also transported fuelwood to Colorado and Nevada. The total number of fuelwood permits issued was down slightly from FY 1989. However, the number of cords of fuelwood harvested increased by 25 percent. Post permits issued nearly doubled; however, the number of posts cut remained nearly the same as in 1989. The demand for Christmas trees has remained fairly constant during the past 3 years. Table 2 shows forest product sales in FY 1990.

TABLE 2

District 1990 Forest Product Sales

Product	Permits Issued	Quantity
Fuelwood	1,016	2,808 cords
Fence Posts	83	4,337 posts
Christmas trees	2,225	2,225 trees

MINERALS

BLM policy for managing mineral and energy resources, drawn from various Acts of Congress, encourages development of public land mineral resources to satisfy national and local needs. Public lands are open to mineral exploration and development unless restrictions are justified in the national interest. We base land use plans on the best data available to reflect mineral values and ensure receipt of fair market value for mineral commodities.

Exploration drilling in the Paradox Basin.

OIL AND GAS

The Moab District administers an active oil and gas program, including geophysical exploration, exploratory and developmental drilling, production operations, and transportation of oil and gas. Oil and gas operations on public lands must comply with regulations and policy guidelines. We work with lessees to develop oil and gas resources without compromising environmental values or wasting valuable energy resources.

As of December 1990, 2,715 separate oil, gas, and oil sand leases covered 2.7 million acres within the district. Oil and gas resources are produced from approximately 55 fields, with a total of 740 active wells (290 oil wells, 392 gas wells, and 58 service wells).

Production from federal leases within the Moab District in FY 1990 amounted to 3.6 million barrels of oil and condensate, and 36.5 billion cubic feet of natural gas. Total revenues generated were $14,078,862, half of which is returned to the State of Utah. Production and revenue totals, by county, are shown in table 3.

In FY 1990 the district received 43 applications for permit to drill, of which 36 were approved. These numbers were down 10 percent from the previous year, reflecting an overall downturn in the domestic oil and gas industry.

Table 3 summarizes drilling activity in FY 1990. Thirty-three wells were drilled in the district, with 24 being completed as producers, for an overall success rate of 72 percent. These wells bring the district total to 2,409. Activity is expected to remain relatively constant, with some potential for increase with favorable natural gas prices.

TABLE 3

District 1990 Oil and Gas Production and Revenues

County	Oil/Condensate (barrels)	Gas (thousand cubic feet)
Carbon	210	139,643
Emery	10,662	298,780
Grand	74,333	7,410,344
San Juan	3,519,893	28,669,425
	3,605,098	36,518,192

County	Rents	Bonuses	Royalties	Total
Carbon	$ 498,272	$ 1,531,030	$ 22,298	$ 2,051,600
Emery	698,077	57,667	87,146	842,890
Grand	827,411	93,649	1,359,435	2,280,495
San Juan	1,278,145	836,257	6,789,475	8,903,877
	$3,301,905	$2,518,354	$8,258,354	$14,078,862

COAL

Moab District manages all of Utah's producing coal mines. Eighteen mining operations and 102 federal coal leases currently involve about 102,000 acres in Carbon, Emery, and Sevier Counties. We review mining and exploration plans and inspect operations. We also verify the quantity and quality of coal produced and prepare geologic and engineering reports to determine the fair market value of competitive lease sales. In FY 1990 we helped process two lease applications for coal reserves essential to maintain existing operations. Since February 1989, competitive lease sales have brought bonus bids of $50 million. At the end of FY 1990, three other coal lease applications were pending.

After a coal lease (or a license for off-lease exploration) is issued, we ensure that mining and exploration are conducted in accordance with the amended Mineral Leasing Act (MLA) and its implementing regulations. Lease operations, discussed in the following sections, include inspection and enforcement, production verification, mining and exploration plan review, diligence compliance, logical mining unit (LMU) approval, bonding, and other actions.

Increasing federal coal production and royalty revenues have led to a consistently mounting lease operations workload. Although the number of coal mines has remained somewhat consistent (table 4), production from the district's federal coal leases grew from 8 million tons in 1984 to over 19 million tons in 1990, royalty revenues from $7 million to about $40 million; half goes to state and local governments.

TABLE 4

1990 End-of-Year Status, Moab District Coal Mines

Parent Company	Operator	Name of Mine
	Kaiser Coal	Geneva*
	Kaiser Coal	Sunnyside (1 and 3)*
Sunedco	Soldier Creek	Soldier Canyon
AMCA	Tower Resources	Pinnacle, Aberdeen, Apex*
AMAX	Castlegate Coal	No. 3 and 5*
ARCO	Beaver Creek	Gordon Creek No. 2* and 7
Quaker State	Valley Camp	Belina No. 1 and 2*
Cyprus Minerals	Plateau Mining	Starpoint No. 2
Coastal States	U.S. Fuel Co.	Skyline No. 1 and 3
Sharon Steel	Utah Fuel Co.	King No. 4, 5*, and 6*
Utah Power & Light	Utah Power & Light	Wilberg/Cottonwood
Utah Power & Light	Utah Power & Light	Des-Bee-Dove*
Utah Power & Light	Utah Power & Light	Deer Creek
ARCO	Beaver Creek	Trail Mountain No. 9
Consolidated Coal Co.	Consolidated Coal Co.	Emery Deep
Coastal States Energy	SUFCO	Convulsion Canyon
Genwal Coal Co.	Genwal Coal Co.	Crandall Canyon
C.O.P. Coal Development	Co-Op Mining	Bear Canyon

*Presently inactive or not producing from federal coal leases.

We inspect mining and exploration operations to ensure that the environment and the coal resource are protected and that operators accurately report production and apply royalty rates, comply with established requirements, achieve maximum economic recovery of federal coal, and abandon operations properly. The increase in production has called for more frequent inspections--70 in FY 1990.

We verify production to confirm the accuracy of federal coal production reporting for royalty purposes. This task has become more critical with the significant increase in royalty revenue. We have also been more involved with the Minerals Management Service, the Government Accounting Office, and the Utah State Tax Commission, which receives half the royalty.

Each month in FY 1990, BLM mining engineers checked reported production against mine and other records and made independent engineering determinations to check the accuracy of production reports.

An MLA mining plan must show that the proposed operation meets all established requirements for development, production, resource recovery and protection, diligence, and maximum economic recovery of federal coal for the life of the mine.

District personnel review such plans and recommend acceptable ones for approval by the Assistant Secretary of the Interior for Lands and Minerals. As mining proceeds, the district has authority to approve changes to the MLA plan that are justified by geologic or engineering conditions encountered. A higher production rate requires more frequent modifications to the approved plan. In FY 1990 we responded to 5 MLA mine plan renewals and processed 17 proposed modifications to approved plans.

The Moab District receives and approves exploration plans for leased and unleased (licensed) federal coal. These operations are monitored for compliance with established requirements that include protection and reclamation of the surface and proper plugging procedures that protect coal and water resources. Data obtained during drilling are submitted to the district for use in determining whether planned operations will achieve the maximum economic recovery of federal coal.

Exploration activity in the district has increased because of the need for additional coal reserves to sustain existing operations. During FY 1990, we monitored three exploration plans involving 15 holes.

Section 6 of the Federal Coal Leasing Amendments Act (FCLAA) of 1976 requires diligent development and continued operation. Diligent development is the production of commercial quantities (1 percent of the recoverable reserves) within 10 years after the lease becomes subject to FCLAA. Once diligent development is achieved, the lease becomes subject to continued operation, which requires minimum annual production of not less than commercial quantities. The continued operation requirement may also be satisfied by the payment of advance royalty in lieu of production.

The district monitors the diligence status of 102 federal coal leases, which requires careful tracking of production crediting and the recoverable reserves established for commercial quantities. At the end of FY 1990, 45 leases were subject to diligent development, 33 to continued operation, and 24 leases were not yet subject to diligence. Advance royalty was collected on approximately 50,000 tons of coal ($100,000) during FY 1990.

MLA authorizes the establishment of LMUs. This mechanism allows production occurring from anywhere within the LMU (private, state, or federal) to be credited toward the diligent development or continued operation requirements.

The district processes LMUs and recommends them for approval. Processing involves (a) establishing the total recoverable reserves, (b) ensuring maximum economic recovery of federal recoverable coal reserves, (c) ensuring that all recoverable coal reserves will be exhausted within 40 years, and (d) establishing the diligence status of the LMU. We processed one LMU application during FY 1990, bringing the district total to four approved LMUs and four pending applications.

The district establishes bonds for compliance with the requirements of MLA and its implementing regulations (including terms and conditions of leases and licenses, production royalty, environmental protection, and reclamation of exploratory operations). During FY 1990, the district reviewed 204 lease bond amounts and recommended adjustments based on new information or changed conditions.

Coal mining under cliff faces can lead to extensive rock slides. The resulting environmental concerns could bring about elimination of millions of tons of recoverable coal reserves and millions of dollars in royalty revenue to the state and federal governments. Moab District, industry, and other concerned agencies are cooperating to develop methods of minimizing subsidence. Current studies will attempt to predict where escarpments are likely to fail, allowing maximum recovery away from sensitive areas.

The solid leasable mineral system (SLMS) is a computerized data base used to track all aspects of a lease or license. The district continually monitors all leases and licenses, using SLMS data to ensure compliance with established requirements.

OIL SAND

Two oil sand deposits lie within the boundaries of Moab District. In Sunnyside, one of the Nation's most economically viable oil sand deposits, seven combined hydrocarbon leases (CHLs) have been issued. Exploration drilling was dormant in 1990, but in recent years, 100 exploratory holes were drilled in and around the Sunnyside area.

Another deposit is located in the San Rafael Swell in Emery County. Although smaller than the Sunnyside deposit, it has attracted the interest of some private companies. Two CHLs have been issued.

Oil sand exploration continues, but has been restrained by depressed oil prices. Commercial production has not begun in the district, but research and development efforts continue to seek improved recovery and processing methods. Active companies anticipate a return to high oil prices, which would provide a lucrative economic environment for exploiting oil sand. With current technology, industry estimates that oil sand development may become a reality when oil prices return to the range of $35 to $40 per barrel.

MINERAL MATERIALS

Sand, gravel, building stone, clay, and fill dirt, used mainly for building and road construction, are produced and sold throughout the district. Petrified wood and travertine are also sold for decorative uses. Humates have not yet been produced, but a deposit near Westwater may be a future source of fertilizer.

Throughout the district 30 community pits have been established to meet public demands for sand and gravel, flagstone, building stone, clay, fill dirt, and decorative stone. Three such pits were established this year.

Yearly sales usually average about 625 tons of flagstone and building stone (valued at

$2,500) and 3,525 cubic yards of bentonite and sand and gravel (valued at $1,000). An additional 2.5 million cubic yards of sand and gravel are given to state and county road departments, saving taxpayers approximately $650,000 per year in road construction and maintenance budgets. BLM conducts more than 200 inspections each year to monitor production of salable minerals and ensure reclamation of exhausted material sites.

LOCATABLE MINERALS

Moab District administers exploration, development, and reclamation activities for uranium, vanadium, gold, silver, manganese, and copper. Currently, over 100,000 mining claims are located within the district; most are for uranium, the second largest number for placer gold.

The locatable minerals program involves a wide range of activities, from answering public inquiries on how to stake a mining claim to helping an individual file permit applications with state and federal agencies, processing mining notices and plans of operations, monitoring mining activity, and helping claimants develop reclamation plans.

Before starting mining activity on federal lands, a claimant must file a mining notice or plan of operations. If 5 or fewer acres per calendar year will be disturbed, no bond is required; the claimant need only notify BLM of the proposed activity. But for actions that would disturb more than 5 acres, or for any operation beyond casual use within any of six special management designation categories, the claimant must submit a plan of operations 30 days in advance.

Bonding is discretionary with BLM. Both mining notices and plans of operation require reclamation to prevent undue degradation of federal lands. During the past year, 4 plans of operations and 43 mining notices were filed.

BLM's mining claim recordation system is the only available means of tracking current mining claims on public lands. In 1989, BLM began charging a fee to record each claim. We expect the fee to reduce the number of speculative mining claims.

NONENERGY LEASABLES

As a fertilizer component, potash is vital to agriculture. Moab District contains one of the Nation's more prominent potash deposits, which resulted from the evaporation of ancient inland seas, leaving vast quantities of salts in the Paradox Basin.

The minable potash under federal lands is buried 6,000 feet or more below the earth's surface. Until advances in technology make mining potash at these depths feasible and economical, the government-subsidized Canadian mines will probably continue to dominate the world potash market.
During the past year, Moab District undertook a project to classify lands underlain by potash. This will help in evaluating the resource and the need for competitive bids for future leasing.

Currently, we monitor 11 potash leases covering 13,470 acres on four known potash leasing areas. Lessees pay rent of approximately $9,530 per year. We are processing 13 potash prospecting permit applications that cover about 31,600 acres.

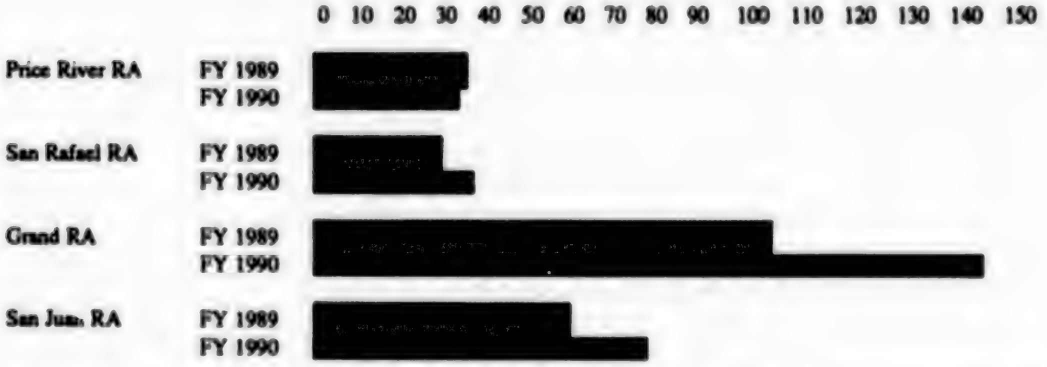
PLANNING AND ENVIRONMENTAL COORDINATION

The BLM planning process, rooted in FLPMA, begins with a physical profile of an area's natural and cultural resources and an estimation of the resources' ability to respond to present and future demands. Current management practices are evaluated, and alternatives for improvement proposed. We seek public input at several points in the process, particularly in anticipating the effects of various alternatives.

Moab District is moving toward completion of resource management plans (RMPs) and environmental impact statements (EISs) for each of its four resource areas. The Grand Resource Area RMP was completed in July 1985. The San Juan proposed RMP and final EIS was subject to a 30-day protest period which ended August 30, 1989. We anticipate that the Director will have addressed the protests and completed the record of decision by May 1991. For the San Rafael proposed RMP and final EIS, the protest period ended October 2, 1989. The Director is expected to address the protests and complete the record of decision by May 1991. The RMP process for Price River Resource Area, to replace the 1983 management framework plan, is scheduled to begin in 1993.

The National Environmental Policy Act of 1969 requires BLM to analyze the impacts of all actions proposed to take place on public lands. These actions can be either BLM or non-BLM proposals, and can involve anything from fence construction to highway construction. Certain groups of actions have been determined to have insignificant environmental impacts; on such actions, instead of preparing a full environmental assessment (EA), we verify that the action meets established criteria for categorical exclusion. Moab District has the largest EA workload in the state. We completed 209 EAs and 74 categorical exclusions in FY 1990, for a total of 283 environmental analyses.

MOAB DISTRICT ENVIRONMENTAL ASSESSMENTS



Our FY 1990 workload of 283 EAs and categorical exclusions exceeded by 32 the number completed in FY 1989.

LAW ENFORCEMENT

FLPMA grants specific law enforcement authority to the Secretary of the Interior to authorize federal personnel or appropriate local officials to enforce all laws and regulations pertaining to the use, management, and development of lands and resources under BLM jurisdiction.

The objective of the BLM law enforcement program is to seek voluntary compliance with federal laws and regulations relating to public lands and resources. When such compliance is not obtained, law enforcement employees are responsible for enforcing applicable laws and regulations, which include but are not limited to various sections of the U.S.C. 16, 18, and 43 and Title 43 of the Code of Federal Regulations, as they relate to the use, management, and development of public lands or protection of any employee of the BLM in performance of his/her official duties. The district has three full-time rangers in addition to a contractual agreement with San Juan County for a deputy who works full-time on public lands.

The major law enforcement workload pertains to antiquities violations and compliance with various permit stipulations.

BLM rangers have a wide variety of duties related to protection of public resources, not only in the archaeology program, but also in the areas of minerals, range, recreation, wilderness, and wood gathering. Rangers also work with other agencies, help in search and rescue and various other emergencies, act to reduce hazards, and safeguard public facilities. All three rangers within the Moab District are certified emergency medical technicians.

Information provided by the public plays a vital role in the BLM law enforcement program. Reports of suspected archaeological vandalism and other crimes from local residents and tourists have helped us apprehend several violators in the past and may be expected to help solve investigations in the future.

HAZARDOUS MATERIALS

In the event of a hazardous material spill or other dangerous incident on public lands, BLM is responsible for compliance with all hazardous material laws.

Managing hazardous materials is a relatively new challenge for BLM, but one that we take seriously. We are responsible to identify, report, and evaluate sites on public lands where hazardous materials occur. BLM employees may also be directed to respond to emergencies and to follow up with related tasks such as assessing the resource damage, containing the spill and cleaning the site, and monitoring and maintaining site reclamation.

The program has focused on identifying any sites containing hazardous materials on public lands. When sites are identified, levels of toxicity will be assessed. We have identified two sites, both in San Juan Resource Area.

PUBLIC AFFAIRS

The BLM public affairs program, mandated by FLPMA, is responsible for two-way communication: informing the public about the Bureau's mission, programs, and management objectives, and apprising management of public attitudes, issues, and reactions.

All BLM employees share responsibility in dealing with the public they serve, working within the guidelines set by their managers, and following BLM policies.

BLM policy incorporates public participation into all program management and project planning as early as possible to identify public concerns and suggestions and to create a forum for people to communicate their ideas and opinions. We complete public participation plans for all major federal actions and utilize public affairs support in analyzing comments received.

The public's right to know requires prompt, courteous responses to inquiries regarding the public lands, their resources, and their management. Accurate and timely information must be disseminated about management actions taken or planned, and the public must be involved as much as possible, so that their views can be considered in decision making. Communication vehicles include news releases, newsletters, letters, brochures, interpretive displays, slide shows and video productions, speeches, meetings, "show-me" field tours, and other special events. We also endeavor to identify and communicate with groups and persons who are interested in or affected by BLM programs, policies, and projects.

Bulk mailings are an important part of the public information process; last year we sent out over 8,000 pieces.

The BLM Utah State Office has established several public notification procedures for people who desire more information about actions occurring on the public lands. Each district office in Utah maintains an environmental document list, which includes all current environmental assessments or impact statements. The list, which is updated monthly and always available for review, describes the proposed action and location, status, and opportunity for public comment and gives the office number to call for more information.

The district also contributes to the "Weekly Wilderness Report," a listing of all actions proposed inside wilderness study areas. The Utah State Office mails this list to anyone who requests it.

Public comment periods are also listed in the *Utah Spectrum*, BLM's monthly statewide newsletter. The *Spectrum* is also sent to anyone who asks to be on the mailing list.

The Moab District Advisory Council is a group of ten persons, experts in various fields, who are nominated locally and selected by the Secretary of the Interior to advise BLM management on planning and decisions. At their regular meetings, which are publicized and open to the public, the council is apprised of current planning efforts, proposals, and issues. Positions on the council represent elected officials, environmental protection, nonrenewable resources, public at large, recreation, renewable resources, transportation and rights-of-way, and wildlife. Council members convey the needs of their constituencies to BLM management, and in turn help disseminate information to interested persons and organizations. The meetings are very informative and highly recommended to anyone who wants the "inside track" on public land management.

The Moab District Advisory Council meeting outdoors in San Juan County.

The Moab District Public Affairs Officer serves as program coordinator and liaison for contacts by the media, congressional staff, special interest groups, and public land users. In addition, this position coordinates all responses to requests made under the Freedom of Information Act and the Privacy Act, serves as fire information officer, and coordinates the Volunteer Program. Other functions include coordination of all printing or video authorizations, photographic support, and district input to the 90-Day Calendar, Director's *Weekly Highlights*, the *Utah Spectrum*, the *Inside Track*, and similar publications.

Our offices in Price, Moab, and Monticello are open Monday through Friday from 7:45 a.m. to 4:30 p.m. Staff specialists in each of our natural resource programs are available to answer any questions you may have. Our managers have an open-door policy and would like to discuss your suggestions for the multiple-use management of your public lands.

Congressman Hansen on a Show-Me field tour of Westwater Canyon.

FIRE MANAGEMENT

BLM's overall fire suppression policy is based on FLPMA's mandate that the public lands be managed to protect environmental quality and sustained yield of renewable resources. However, we also recognize that fire can be a valuable range management tool. Moab District planning documents identify areas where fire can be managed for the maximum resource benefit.

The use of prescribed burns is increasing in the district. Two successful burns were accomplished in 1990, with two more planned for 1991. These prescribed burns have primarily benefitted the range and wildlife programs.

Fire suppression in 1990 was considered average, even though the district was experiencing its third year of drought. The drought has decreased the amount of fine fuels and therefore virtually eliminating large desert grass fires. This was offset, though, by an increase in high-country timber fires, which are difficult to suppress and logistically hard to manage. In 1990 there were 93 fire incidents resulting in 66 fires on BLM land, burning a total of 225 acres. The most serious was the 180-acre Calf Creek fire in the Roan Cliffs north of Green River. This fire threatened several ranches. The remaining 27 fire incidents were either false alarms or interagency support of other agencies' fires.

Suppression crew digging a fireline with hand tools.

END

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